OCCUPATIONAL INJURIES AND DISEASES IN ALBERTA

Oilfield Trucking Services 1995 to 1999

Upstream Oil and Gas
Sub-Sector #8

Alberta
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AND EMPLOYMENT

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1. Introduction

The Mission of Alberta Human Resources and Employment

One of the missions of Alberta Human Resources and Employment is to work in partnership with Albertans to promote safe and healthy workplace, a quality working life and comprehensive safety systems. To this end, Alberta Human Resources and Employment recognises that monitoring health and safety in Alberta will help to ensure primary workplace health and safety concerns are actively managed and prioritised, and resources directed where most needed.

This report summarises the lost-time injuries and disease descriptions, characteristics of the injured worker and the risk of injury to workers in Alberta's upstream oil and gas industries for the years 1995 to 1999. Cost of the injuries and revenue in terms of total premiums paid by employers. Finally, a summary of occupational fatalities accepted by the WCB for compensation and brief descriptions of fatalities investigated by Occupation Health and Safety are also provided.

The purpose of this report is to provide government, employers, workers and health and safety officers in upstream oil and gas industries with information about the industry key health and safety issues.

Description of Upstream Oil and Gas Industries

The upstream oil and gas industries can be subdivided into the following sub-sectors.
Exploration, Oilfield Maintenance and Construction, Well Servicing with Service Rigs and Power Swivels, Drilling of Oil and Gas Wells, Oilfield Downhole and Other Services, Tar Sands, Petroleum Producers, and Oilfield Trucking Services.

The next section gives the descriptions of the Oilfield Trucking Services sub-sector.

2. Sub-Sector Description

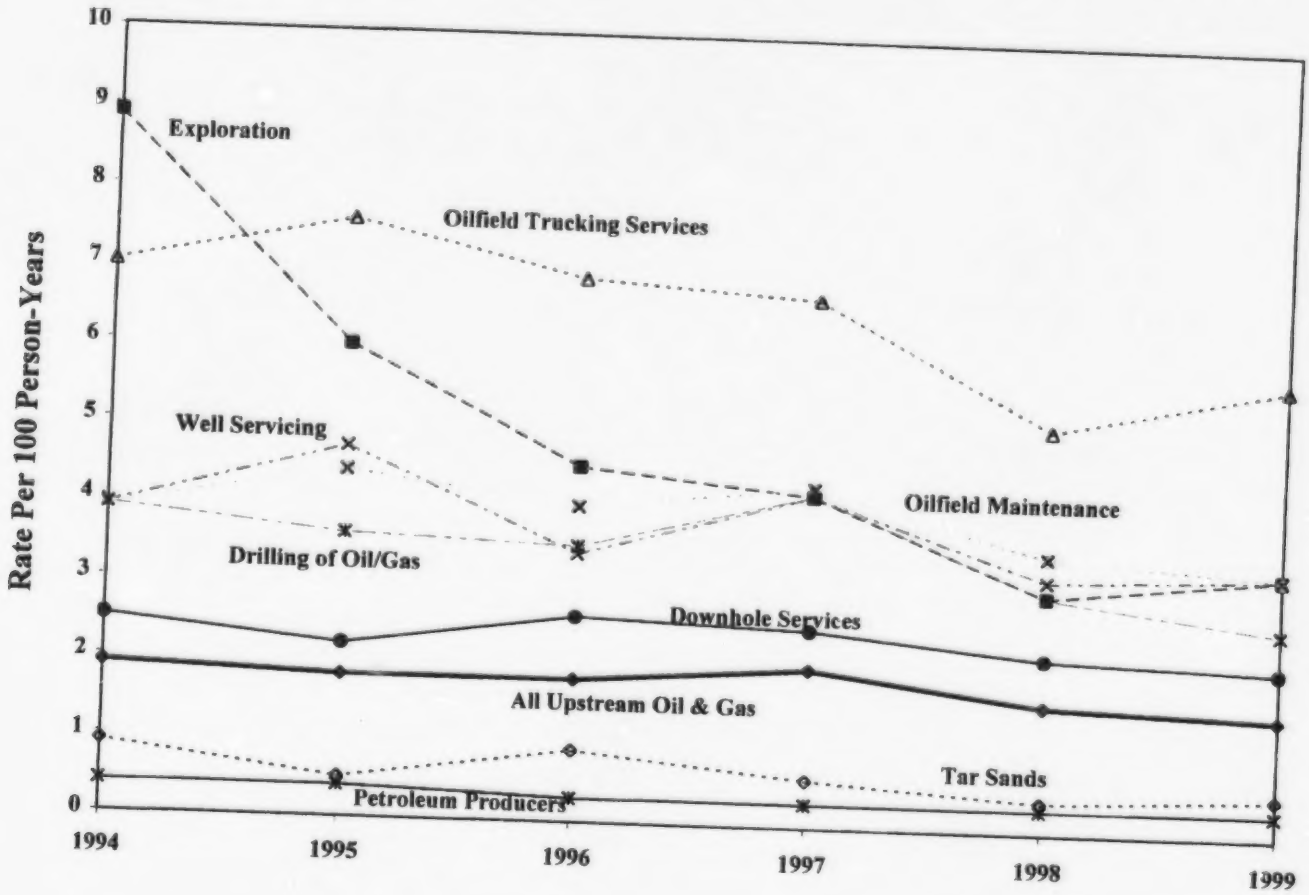
Sub-Sector # 8: Oilfield Trucking Services

Oilfield Trucking Services (Industry # 50720)
This industry describes businesses that operate for-hire trucking equipment for the purpose or ability to transport oversized or overweight loads, off-highway loads, in the oilfield. Services in this industry include for hire specialized trucking services to and from oil and gas lease sites, not described under Specialized Hauling (industry 50701), or bulk or tank truck hauling (industry 50714)

Businesses may own or lease trucks, vehicles and equipment and shipping/receiving facilities or terminals. Business may opt to subcontract lease operators to provide trucking/delivery services, while only conducting scheduling, dispatching, and billing services in-house.
As most oil and gas lease sites are located in remote areas, vehicles are typically modified to operate in an off-road environment. Vehicles are usually equipped with positive air shut-offs. These attachments prevent engine from running once turned off, particularly in areas of highly combustible/explosive gases. The industry include rig moving and operating pilot cars, and businesses in this industry may provide some highway hauling service using standard flatdecks and trucks in the course of a move.

Business may utilize specialized trucking equipment with tire chains, skid plates, heavy-duty bumpers, winche cherry pickers and may employ drivers, labourers (swampers), warehouse/yard staff, forklift drivers, mechanic dispatch/traffic, sales/estimators, office/administrative staff.

Lost-Time Claim Rates
Upstream Oil & Gas Subsectors
Alberta: 1994-1999



3. Lost-Time Claim Rates and Duration Rates

50720-Oilfield Trucking Services

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	436	$803,365	1,838	7,842	427	139	7.6
1996	482	$927,398	2,255	7,612	337	155	6.9
1997	587	$1,371,117	3,348	9,333	279	225	6.7
1998	653	$1,172,951	3,310	7,767	235	168	5.1
1999	657	$845,818	2,707	7,690	284	153	5.7

3.1 LTC Rates by Size of Employer: 1999

Size of Employer	# of Accounts	LTCs	Person - Years	LTC Rate
A: 0< PY <=1	454	7	191	3.7
B: 1 < PYs < 5	89	11	200	5.5
C: 5 <= PYs < 10	27	8	177	4.5
D: 10 <= PYs < 20	23	16	324	4.9
E: 20 <= PYs < 40	18	39	507	7.7
F: 40 <= PYs < 100	6	29	483	6.0
G: PYs >=100	5	43	824	5.2
H: Invalid	35	N/A	0	N/A
Total	657	153	2,707	5.7

4. Analysis of the Lost-Time Claims

4.1 Nature of Injury

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
SPRAIN, STRAIN, TEARS	51	51	87	57	53	299	35.6
FRACTURE, DISLOCATION	31	34	52	33	34	184	21.9
SURFACE WOUNDS, BRUISES	27	28	39	27	19	140	16.7
OTHER TRAUMATIC INJURIES/DISEASE	7	17	14	22	26	86	10.2
OPEN WOUNDS	12	10	18	14	9	63	7.5
SYSTEMIC DISEASES,DISORDERS	2	8	2	4	1	17	2.0
BURNS	2	2	4	3	2	13	1.5
MULTIPLE DISEASE, DISORDERS	.	1	.	3	.	4	0.5
SYMPTOMS, SIGN/ILL-DEFINED CONDITIONS	.	.	.	.	2	2	0.2
OTHER DISEASE,CONDITIONS,DISORDERS	.	.	.	1	.	1	0.1
NATURE-UNKNOWN	7	4	9	4	7	31	3.7
Total	139	155	225	168	153	840	100.0

4.2 Duration of Disability

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
A: 01 Day	5	5	8	6	8	32	3.8
B: 02 Days	5	9	12	7	8	41	4.9
C: 03 - 05 Days	12	14	33	27	12	98	11.7
D: 06 - 10 Days	18	15	25	27	21	106	12.6
E: 11 - 20 Days	21	22	25	20	26	114	13.6
F: 21 - 30 Days	18	13	17	9	10	67	8.0
G: 31 Days OR More	58	73	94	69	65	359	42.7
H: Unspecified	2	4	11	3	3	23	2.7
Total	139	155	225	168	153	840	100.0

4.3 Type of Event/Exposure

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
STRUCK BY OBJECTS	24	25	43	31	27	150	17.9
CAUGHT IN OBJECTS	22	25	29	24	19	119	14.2
OVEREXERTION	14	17	29	25	17	102	12.1
FALL TO LOWER LEVEL	19	12	20	25	15	91	10.8
BODILY REACTION	12	18	25	8	17	80	9.5
TRANSPORTATION ACCIDENTS	12	11	19	17	11	70	8.3
FALL ON SAME LEVEL	9	9	20	12	12	62	7.4
STRUCK AGAINST OBJECTS	5	6	8	7	4	30	3.6
OTHER FALLS	.	7	8	3	10	28	3.3
EXPOSURE TO HARMFUL SUBSTANCES	6	3	3	6	4	22	2.6
RUBBED OR ABRADED	2	1	2	2	.	7	0.8
OTHER BODILY REACTION/EXERTION	.	.	1	3	.	4	0.5
REPETITIVE MOTIONS	.	.	.	.	2	2	0.2
FIRES AND EXPLOSIONS	.	.	2	.	.	2	0.2
UNKNOWN	14	21	16	5	15	71	8.5
Total	139	155	225	168	153	840	100.0

4.4 Part of Body Injured

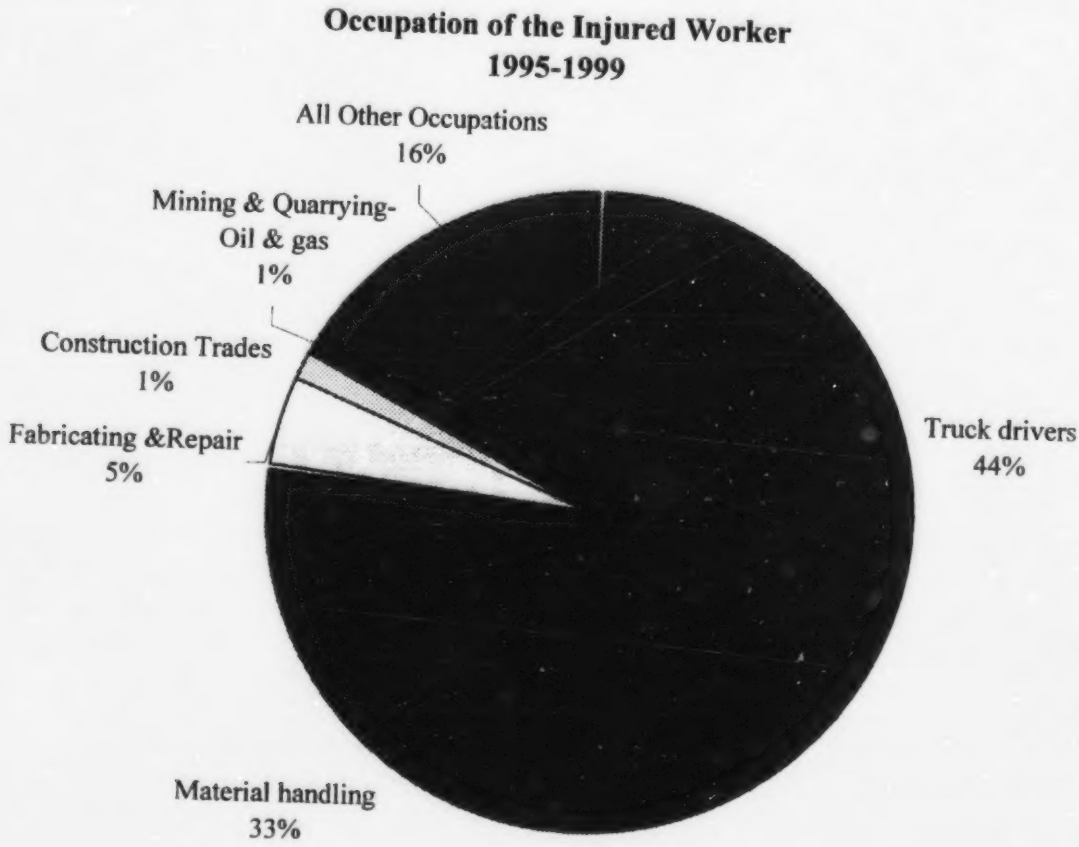
LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
BACK	27	33	51	38	33	182	21.7
ANKLE(S) & FOOT(FEET)-NOT TOES	18	25	42	26	23	134	16.0
LEG(S)	15	27	35	20	26	123	14.6
FINGER(S)	23	15	22	15	21	96	11.4
OTHER TRUNK	19	20	21	18	15	93	11.1
WRIST(S)/HAND(S)	8	15	11	13	6	53	6.3
OTHER HEAD	6	3	11	9	8	37	4.4
OTHER UPPER EXTREMITIES	7	7	8	10	4	36	4.3
MULTIPLE BODY PARTS	6	4	9	7	8	34	4.0
NECK	6	3	3	6	2	20	2.4
EYE(S)	4	1	5	3	2	15	1.8
OTHER LOWER EXTREMITIES	.	2	5	2	4	13	1.5
BODY SYSTEMS	.	.	.	1	.	1	0.1
UNKNOWN	.	.	2	.	1	3	0.4
Total	139	155	225	168	153	840	100.0

4.5 Source of Injury

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
PARTS AND MATERIALS	29	37	61	41	40	208	24.8
STRUCTURES/SURFACES	19	18	35	26	27	125	14.9
VEHICLES	22	16	31	31	20	120	14.3
PERSONS-INJURED WORKER	12	19	26	11	19	87	10.4
OTHER SOURCES	11	4	7	5	2	29	3.5
HANDTOOLS-UNPOWERED	4	10	5	4	4	27	3.2
CONTAINERS	7	3	5	4	3	22	2.6
MACHINERY	3	2	3	7	3	18	2.1
FURNITURE AND FIXTURES	1	4	4	3	1	13	1.5
OTHER TOOLS/EQUIPMENTS	.	1	5	1	1	8	1.0
CHEMICAL/CHEMICAL PRODUCTS	.	.	1	3	2	6	0.7
MINERALS-METALS/NONMETALLIC	.	.	3	1	.	4	0.5
HANDTOOLS-POWERED	.	.	2	1	.	3	0.4
OTHER PLANTS/ANIMALS/MINERALS	1	1	.	.	.	2	0.2
PERSONS-OTHER THAN INJURED WORKER	.	.	.	.	1	1	0.1
UNKNOWN	30	40	37	30	30	167	19.9
Total	139	155	225	168	153	840	100.0

5. Characteristics of the Injured Worker

5.1 Occupation of the Injured Worker



5.2 Age of injured Worker

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
A: 15 - 19 Years	7	11	22	17	6	63	7.5
B: 20 - 24 Years	26	33	35	37	30	161	19.2
C: 25 - 34 Years	60	55	64	50	41	270	32.1
D: 35 - 44 Years	25	33	69	44	41	212	25.2
E: 45 - 54 Years	16	15	25	13	23	92	11.0
F: 55+ Years	5	8	10	7	12	42	5.0
Total	139	155	225	168	153	840	100.0

5.3 Length of Time Employed

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
A: LESS THAN 1 MONTH	17	16	32	11	13	89	10.6
B: 1 MONTH TO < 6 MONTHS	30	38	61	50	30	209	24.9
C: 6 MONTHS TO < 1 YEAR	27	20	26	25	11	109	13.0
D: 1 YEAR OR MORE	51	46	53	37	60	247	29.4
E: TIME UNSPECIFIED	14	35	53	45	39	186	22.1
Total	139	155	225	168	153	840	100.0

5.4 Gender of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
MALES	137	148	216	163	149	813	96.8
UNSPECIFIED	2	2	4	3	2	13	1.5
FEMALES	.	5	5	2	2	14	1.7
Total	139	155	225	168	153	840	100.0

6. Cost of Claims and Employer Premiums

Sub-Sector 8-Oilfield Trucking Services

	OCCURRENCE YEAR				
	1995	1996	1997	1998	1999
TRANSACTION YEAR					
1995	$594,459				
1996	$510,185	$770,343			
1997	$279,109	$417,753	$1,027,820		
1998	$405,166	$375,387	$683,729	$988,240	
1999	$294,584	$334,252	$514,252	$1,562,846	$943,732
Total Cost	$2,083,503	$1,897,735	$2,225,801	$2,551,086	$943,732
Total Premiums	$5,855,589	$4,913,508	$5,526,030	$4,419,310	$2,814,158

The above cost of lost-time claims and premiums are for the five-year period 1995 through to 1999. The data is as at July 6, 2000.

The claim cost reflects only paid cost on lost-time claims that occurred in the five-year period. These costs are tracked by year of occurrence and the year that the costs were transacted.

The premiums are the total premiums paid by employers for each year.

7. Occupational Fatalities

An occupational fatality is the death of a worker that results from a work-related incident or exposure. Alberta Human Resources and Employment classifies occupational fatalities into three general types: motor vehicle incident, workplace incident and occupational diseases. Each is described in detail below.

Motor Vehicle Incident

Motor vehicle incidents typically involve highway vehicles operating on public roads in which the fatally injured worker was either the driver or a passenger. This category also includes fatalities involving aircraft crashes, train crashes, helicopter crashes. Etc.

Workplace Incident

Fatal workplace incidents consist of cases in which the worker dies at a work site, or as a result of injuries sustained at a work site. It is this type of fatality that Alberta Human Resources and Employment may be responsible for investigating.

Occupational Diseases

Occupational disease fatalities consist mostly of recognized occupational disease, that is, disease known to be primarily or exclusively work-related (e.g. asbestosis, black lung disease). Occupational diseases are frequently diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the fatal exposure occurred. Thus, the occupational disease category should not be interpreted to reflect present work site hazardous conditions or exposures.

Each year the Workers' Compensation Board (WCB) accepts some occupational fatality claims for compensation. Occupational fatality claims that were accepted in a particular year may include fatalities from prior years.

Description of Oilfield Trucking Services Workplace Fatalities Accepted by the WCB Alberta: 1995-1999

Year	Occupational Disease		Motor Vehicle incident		Workplace Incident		Total	
	N	%	N	%	N	%	N	%
1995	0	0	0	0	0	0	0	0
1996	0	0.0	1	100.0	0	0.0	1	100
1997	0	0.0	2	100.0	0	0.0	2	100
1998	0	0	0	0	0	0	0	0
1999	0	0.0	1	100.0	0	0.0	1	100
Total	0	0.0	4	100.0	0	0.0	4	100

8. OHS Investigated Occupational Fatalities: 1995-1999

There were no investigated workplace fatalities in this sub-sector for the period 1995 through 1999.

Appendix A: Terms, Definitions, and Formulas

Lost-Time Claim

A lost-time claim (LTC) is a claim for an occupational injury or disease which disables the worker beyond the day of injury. Included are claims for which wages compensation are paid, permanent disability claims, fatalities, and cases in which the injured worker is assigned light duties or other modified work.

Person-Years

Person-year estimates are calculated from wage and payroll data provided by account holders to the WCB. Alberta Labour uses these data to estimate. An average industry wage, and uses the average industry wage and employer payroll data to estimate person-years foe each employer and each industry. One person-year ie equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked.

LTC Rate

The lost-time claim (LTC) rate is calculated by dividing the number of lost-time claims by the person-year estimate, and multiplying the result by 100. The LTC rate represent the probability or risk of disabling injury or disease to a worker during a period of one year's work. Comparisons of LTC rates between industries, or between years, can be used to indicate increases, decreases, or differences in this risk.

$$\text{LTC Rate} = \frac{\text{Number of LTCs X 100}}{\text{Estimated Person-years}}$$

Duration (Days Lost)

The duration of disability is the number of days following the injury or disease for which the worker was disabled, and unable to perform normal work duties. This information is obtained for this report from data on compensation days paid on each claim from WCB. Alberta Labour obtains these data on March 31 of the year following the claim year, and does not update the information, even though many injured workers continue to be disabled beyond this date. As a result, the duration information reported here underestimates the true impact of lost-time injury and disease.

Duration Rate

The duration rate is calculated by dividing the number of work days lost (disability days) by the person-year estimate, and multiplying by 100. The result is expressed as "days lost per 100 person-years worked", and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic cost. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims.

$$\text{Duration Rate} = \frac{\text{Disability Days X 100}}{\text{Estimated Person-Years}}$$

WCB Accepted Fatality

An occupational fatality is the death of a worker which result from a work-related incident or exposure and which has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.

NEC

Means "Not Elsewhere Classified"

UNS

Means "Unspecified"

Appendix B: Upstream Oil and Gas 1999 Industry Codes

Sub-Sector 1: **Exploration**
Industries: 09200~Seismic Geophysical/Mineral Exploration
09201~Shot Hole Drilling

Sub-Sector 2: **Oilfield Maintenance and Construction**
Industries: 06304~Oilfield Construction and/or Maintenance

Sub-Sector 3: **Well Servicing With Service Rigs**
Industries: 09903~Well servicing with Service Rigs including Power Swivels

Sub-Sector 4: **Drilling of Oil and gas Wells**
Industries: 09600~Drilling of Oil & Gas Wells

Sub-Sector 5: **Downhole & Other Oilfield Services**
Industries 06305~Field Production Operators
06306~Vacuum Removal of Waste
09900~Mud Logging
09902~Pressure Cleaning Services
09904~Rathole Drilling and Rig Anchoring
09911~Oilfield Downhole Services
09915~Well Casing Services
09921~Servicing Christmas Trees On Oil Wells
09927~Liquid Waste Treatment & Disposal

Sub-Sector 6: **Tar Sands**
Industries: 06600~Mining & Processing of Bituminous Sand
06601~Research/Development, Oil Sands and Heavy Oil Recovery

Sub-Sector 7: **Oil & Gas Exploration/Development**
Industries: 06300~Oil and Gas Exploration & Development-Upstream Operations

Sub-Sector 8: **Oilfield Trucking Services**
Industries: 50720~Oilfield Trucking Services